

SECTION 01 32 16.15
PROJECT SCHEDULES

PART 1- GENERAL

1.1 DESCRIPTION:

The Contractor shall develop a Critical Path Method (CPM) plan and schedule demonstrating fulfillment of the contract requirements (Project Schedule). Show in the schedule the sequence in which the Contractor proposes to perform the work and dates on which the Contractor contemplates starting and completing all schedule activities. The scheduling of the entire project, including the design (when applicable) and construction sequence is required. Contract management personnel, designers (when applicable), subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The Contractor shall keep the Project Schedule up-to-date in accordance with the requirements of this section and shall utilize the plan for scheduling, coordinating and monitoring work under this contract (including all activities of designers, subcontractors, equipment vendors and suppliers as applicable). Conventional Critical Path Method (CPM) technique shall be utilized. The contractor shall use CPM software Primavera 6.0 or equivalent in generating the project schedule and cost loading. The Contracting Officer's Representative (COR) has the right to approve or disapprove the schedule and/or cost loading.

The baseline schedule must be approved by the COR before an initial application for payment can be made.

1.2 CONTRACTOR'S REPRESENTATIVE:

- A. The Contractor shall designate an authorized representative responsible for the Project Schedule including preparation, review and progress reporting with and to the COR.
- B. The Contractor's representative shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the requirements of this specification section.
- C. The Contractor's representative shall have the option of developing the project schedule within their organization or to engage the services of an outside consultant. If an outside scheduling consultant is utilized, Section 1.3 of this specification will apply.

1.3 CONTRACTOR'S CONSULTANT:

- A. The Contractor shall submit a qualification proposal to the Contracting Officer within five(5)calendar days after the Notice to Proceed. The qualification proposal shall include:
1. The name and address of the proposed consultant.
 2. Information to show that the proposed consultant has the qualifications to meet the requirements specified in the preceding paragraph.
 3. A representative sample of prior construction projects, which the proposed consultant has performed complete project scheduling services. These representative samples shall be of similar size and scope.
- B. The Contracting Officer has the right to approve or disapprove the proposed consultant, and will notify the Contractor of the VA decision within seven (7) calendar days from receipt of the qualification proposal. In case of disapproval, the Contractor shall resubmit another consultant within five (5) calendar days for renewed consideration. The Contractor shall have their scheduling consultant approved prior to submitting any schedule for approval.

1.4 THE BASELINE PROJECT SCHEDULE SUBMITTAL

- A. Within 15 calendar days after receipt of Notice to Proceed, the Contractor shall submit, for the Contracting Officer's review, an electronic version and hard copy version of the draft baseline schedule on sheets of paper 11 inches by 17 inches and an electronic file in the previously approved CPM schedule program. The submittal shall also include the following in conjunction with the requirements of paragraph 1.7:
1. An electronic version and hard copy of a computer-produced activity/event ID schedule showing project duration;
 2. Phase completion dates; and other data, including event cost.
 3. Each activity/event on the computer-produced schedule shall contain as a minimum, but not limited to, activity/event ID, activity/event description, duration, budget amount, early start date, early finish date, late start date, late finish date and total float.
 4. Work activity/event relationships shall be restricted to finish-to-start or start-to-start without lead or lag constraints.
 5. Activity/event date constraints, not required by the contract, will not be accepted unless submitted to and approved by the Contracting

- Officer. The contractor shall make a separate written detailed request to the Contracting Officer identifying these date constraints and secure the Contracting Officer's written approval before incorporating them into the network diagram. The Contracting Officer's separate approval of the Project Schedule shall not excuse the contractor of this requirement.
6. Logic events (non-work) will be permitted where necessary to reflect proper logic among work events, but must have zero duration.
 7. The complete working schedule shall reflect the Contractor's approach to scheduling the complete project.
 8. **The final Baseline Project Schedule in its original form shall contain no contract changes or delays which may have been incurred during the final network diagram development period and shall reflect the entire contract duration as defined in the bid documents.** These changes/delays shall be entered at the first update after the final Project Schedule has been approved.
 9. The Contractor should provide their requests for time and supporting time extension analysis for contract time as a result of contract changes/delays, after this update, and in accordance with Article, ADJUSTMENT OF CONTRACT COMPLETION and in accordance with paragraph 1.8.
- B. Within fifteen (15) calendar days after receipt of the draft baseline schedule and final Baseline Project Schedule, the Contracting Officer or his representative, will do one or both of the following:
1. Notify the Contractor concerning his actions, opinions, and objections.
 2. A meeting with the Contractor at or near the job site for joint review, correction or adjustment of the proposed plan will be scheduled if required. Within seven (7) calendar days after the joint review, the Contractor shall revise and shall submit an electronic version and hard copy version of the draft baseline schedule on sheets of paper 11 inches by 17 inches and an electronic file in the previously approved CPM schedule program. The revised submission will be reviewed by the Contracting Officer and, if found to be as previously agreed upon, will be approved.
- C. The approved baseline schedule shall constitute the approved baseline schedule until subsequently revised in accordance with the requirements of this section.
- D. Compact Disk Requirements and CPM Activity/Event Record Specifications: Submit to the VA an electronic file(s) containing one file of the data

required to produce a schedule, reflecting all the activities/events of the complete project schedule being submitted

- E. To the extent that the Project Schedule or any revised Project Schedule shows anything not jointly agreed upon, it shall not be deemed to have been approved by the COR.

1.5 PROJECT SCHEDULE REQUIREMENTS

The Project Schedule shall meet all requirements of this specification. Failure of the Contractor to meet the requirements of this specification will result in the disapproval of the schedule.

A. Level of Detail Required:

Develop the Project Schedule to an appropriate level of detail. Failure to develop the Project Schedule to an appropriate level of detail, as determined by the Contracting Officer, will result in its disapproval. The Contracting Officer will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail:

a. General Activity Requirements:

- i. At a minimum, activities shall be divided to define applicable CSI divisions, disparate areas of work (e.g. floor, building, etc.) & phase of the Project.
- ii. Schedule tasks in working days (5-working days per week).
- iii. Identify premium time shifts such as overtime, off shift or holiday time separately from normal work activities.
- iv. Identify interruptions in government operations including, but not limited to: utility outages, parking or traffic closures.
- v. Project schedule shall start with Contract Award identified as Activity ID #1.
- vi. Contractor shall identify milestones a completion of significant events including, but not limited to: building code inspections, completion of major systems or assemblies, substantial or partial completion.

- b. Procurement Activities: The schedule must include the contractor's time required for activities associated with the submittal of shop drawings, templates, samples, equipment schedules, or similar items. It must also include activities for the Contracting Officer's and Architect-Engineer's review and approval of all submittals. In

addition, there shall be activities that represent the time required for, procurement, fabrication and delivery of long lead materials, equipment, fabricated assemblies and supplies. Long lead procurement activities are those with an anticipated procurement sequence of over ninety (90) calendar days.

c. Other Activity Information: Show on the project schedule the sequence of work activities/events required for complete performance of all items of work. The Contractor Shall:

- Show not only the activities/events for actual construction work for each trade category of the project, but also trade relationships to indicate the movement of trades from one area, floor, or building, to another area, floor, or building, for at least three(3) trades who are performing major work under this contract.
- Break up the work into activities/events of a duration no longer than twenty (20) work days each or one reporting period, except as to non-construction activities/events (i.e., procurement of materials, delivery of equipment, concrete and asphalt curing) and any other activities/events for which the COR may approve the showing of a longer duration. The duration for VA approval of any required submittal, shop drawing, or other submittals will not be less than ten (10) work days.
- Describe work activities/events clearly, so the work is readily identifiable for assessment of completion. Activities/events labeled "start," "continue," or "completion," are not specific and will not be allowed.
- The schedule shall be generally numbered in such a way to reflect discipline, phase, or location of the work.
- Failure to include any element of work required for the performance of this contract shall not excuse the Contractor from completing all work required within any applicable completion date of each phase regardless of the COR's approval of the Project Schedule.
- The schedule is to clearly show the critical path.

d. Mandatory Tasks: The following tasks must be included and properly scheduled where applicable to the project:

- Submission and approval of O&M manuals.
- Submission and approval of as-built drawings.
- Close-out Submittals
- Submission and approval of test and balance.
- Performance verification.
- Fire Proofing Tests
- Inspection Reports of Acceptance of manufacturer, if required.
- Other systems testing, if required.

e. Contractor's inspection and correction of own punch list.

f. Government's inspection and contractor correction of punch list.

g. VA inspection and acceptance activity/event with a minimum duration of five work days at the end of each phase and immediately preceding any VA move activity/event required by the contract phasing for that phase.

h. Owner Training.

B. Supporting Data:

The Contractor shall submit the following supporting data in addition to the project schedule:

- a. The appropriate project calendar including working days and holidays.
- b. The planned number of shifts per day.
- c. The number of hours per shift.

1.6 WORK ACTIVITY/EVENT COST DATA

A. The Contractor shall cost load all work activities/events except procurement activities. Cost load the completion of Government final inspection activity(ies) not less than four (4) percent of the total contract value. Cost load contract closeout documents, warranty manuals and O&M manuals combined at 1%. The cumulative amount of all cost loaded work activities/events (including alternates) shall equal the total contract price. Incorporate overhead, profit and general conditions within all work activities/events for the entire project length. The contractor shall generate from this information cash flow curves indicating graphically the total percentage of work activity/event dollar value scheduled to be in place on early finish, late finish. These cash flow curves will be used by the Contracting Officer to assist

him in determining approval or disapproval of the cost loading. Negative work activity/event cost data will not be acceptable, except on VA issued contract changes.

- B. The Contractor shall cost load work activities/events for guarantee period services, test, balance and adjust various systems in accordance with the provisions in Article, FAR 52.232 - 5 (PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS) and VAAR 852.236 - 83 (PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS).
- C. In accordance with FAR 52.236 - 1 (PERFORMANCE OF WORK BY THE CONTRACTOR) and VAAR 852.236 - 72 (PERFORMANCE OF WORK BY THE CONTRACTOR), the Contractor shall submit, simultaneously with the cost per work activity/event of the construction schedule required by this Section, a responsibility code for all activities/events of the project for which the Contractor's forces will perform the work.
- D. The Contractor shall cost load work activities/events for all BID ITEMS including ASBESTOS ABATEMENT. The sum of each BID ITEM work shall equal the value of the bid item in the Contractors' bid.

1.7 COMPUTER PRODUCED SCHEDULES

- A. The contractor shall provide monthly, to the Department of Veterans Affairs (VA), all computer-produced time/cost (as applicable) schedules and reports generated from monthly project updates. This monthly computer reporting will include: an electronic version of specified reports of the scheduling software and an electronic Project Schedule file from the software being utilized as well as a PDF version of the schedule. This monthly submission is to include a computer generated listing of all project schedule logic changes and associated data made at the update as well as an electronic file of this data; and the resulting monthly updated schedule in PDF format. These must be submitted with and substantively support the contractor's monthly payment request and the signed look ahead report. The COR shall identify the different report formats that the contractor shall provide based on the capabilities of the software being utilized and the type and complexity of the project.
- B. The contractor shall be responsible for the correctness and timeliness of the computer-produced reports. The Contractor shall also be responsible for the accurate and timely submittal of the updated project schedule and all CPM data necessary to produce the computer reports and payment request that is specified.

- C. The VA will report errors in computer-produced reports to the Contractor's representative within ten calendar days from receipt of reports. The Contractor shall reprocess the computer-produced reports and associated diskette(s), when requested by the Contracting Officer's representative, to correct errors which affect the payment and schedule for the project.

1.8 CHANGES TO THE SCHEDULE

Include only those project schedule changes in the schedule submission that have been included in executed change order received. Cost loading of the changes as well as activity loading and logic, needs to be approved by the Contracting Officer prior to incorporating them into the schedule.

- A. Within seven (7) calendar days after VA acceptance and approval of any updated project schedule, the Contractor shall submit a revised electronic file(s) and a list of any activity/event changes including predecessors and successors for any of the following reasons:
1. Delay in completion of any activity/event or group of activities/events, which may be involved with contract changes, strikes, unusual weather, and other delays will not relieve the Contractor from the requirements specified unless the conditions are shown on the CPM as the direct cause for delaying the project beyond the acceptable limits.
 2. Delays in contractor submittals, or deliveries, or work stoppage are encountered which make rescheduling of the work necessary. There will be no additional cost to the Government for these delays.
 3. The schedule does not represent the actual prosecution and progress of the project.
 4. When there is, or has been, a substantial revision to the activity/event costs regardless of the cause for these revisions.
- B. Schedule revisions made under this paragraph which affect the previously approved computer-produced schedules for Government furnished equipment, vacating of areas by the VA Facility, contract phase(s) and sub-phase(s), utilities furnished by the Government to the Contractor, or any other previously contracted item, shall be furnished in writing to the Contracting Officer for approval.
- C. Contracting Officer's approval for the revised project schedule and all relevant data is contingent upon compliance with all other paragraphs of

this section and any other previous agreements by the Contracting Officer or the VA representative.

- D. Specifically identify all logic changes and original duration changes to the schedule. Logic changes can be the result of change orders, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress and other changes made pursuant to contract provisions. The Government will only approve logic revisions for the purpose of keeping the schedule valid in terms of its usefulness in calculation a realistic completion date, correcting erroneous logic ties and accurately sequencing of work.
- E. The cost of revisions to the project schedule resulting from contract changes will be included in the proposal for changes in work as specified in FAR 52.243 - 4 (Changes) and VAAR 852.236 - 88 (Changes - Supplemental), and will be based on the complexity of the revision or contract change, man hours expended in analyzing the change, and the total cost of the change.
- F. The cost of revisions to the Project Schedule not resulting from contract changes is the responsibility of the Contractor.

1.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

1.10 PAYMENT TO THE CONTRACTOR:

- A. Monthly, the contractor shall submit the AIA application and certificate for payment documents G702 & G703 reflecting updated schedule activities and cost data in accordance with the provisions of the following Article, PAYMENT AND PROGRESS REPORTING, as the basis upon which progress payments will be made pursuant to Article, FAR 52.232 - 5 (PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS) and VAAR 852.236 - 83 (PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS). The Contractor shall be entitled to a monthly progress payment upon approval of progress as determined from the currently approved updated project schedule. Monthly payment requests shall include: a listing of all agreed upon project schedule changes and associated data; an electronic file (s) of the resulting monthly updated schedule; and a brief narrative describing the key features of work that occurred that month as well as narratives of the logic changes made and the basis for them.

- B. Approval of the Contractor's monthly Application for Payment shall be contingent, among other factors, on the submittal of a satisfactory monthly update of the project schedule.

1.11 PAYMENT AND PROGRESS REPORTING

- A. Monthly schedule update meetings will be held on dates mutually agreed to by the COR and the Contractor. Contractor and their CPM consultant (if applicable) shall attend all monthly schedule update meetings. The Contractor shall accurately update the Project Schedule and all other data required and provide this information to the COR three work days in advance of the schedule update meeting. Job progress will be reviewed to verify:
1. Actual start and/or finish dates for updated/completed activities/events.
 2. Remaining duration for each activity/event started, or scheduled to start, but not completed.
 3. Logic, time and cost data for change orders, and supplemental agreements that are to be incorporated into the Project Schedule.
 4. Changes in activity/event sequence and/or duration which have been made, pursuant to the provisions of following Article, ADJUSTMENT OF CONTRACT COMPLETION.
 5. Completion percentage for all completed and partially completed activities/events.
 6. Logic and duration revisions required by this section of the specifications.
 7. Activity/event duration and percent complete shall be updated independently.
- B. After completion of the joint review, the contractor shall generate an updated computer-produced calendar-dated schedule and supply the Contracting Officer's representative with reports in accordance with the Article, COMPUTER PRODUCED SCHEDULES, specified.
- C. After completing the monthly schedule update, the contractor's representative or scheduling consultant shall rerun all current period contract change(s) against the prior approved monthly project schedule. The analysis shall only include original workday durations and schedule logic agreed upon by the contractor and resident engineer for the contract change(s). When there is a disagreement on logic and/or durations, the Contractor shall use the schedule logic and/or durations provided and approved by the resident engineer. After each rerun update, the resulting electronic project schedule data file shall be

appropriately identified and submitted to the VA in accordance to the requirements listed in articles 1.4 and 1.7. This electronic submission is separate from the regular monthly project schedule update requirements and shall be submitted to the resident engineer within seven (7) calendar days of completing the regular schedule update. Before inserting the contract changes durations, care must be taken to ensure that only the original durations will be used for the analysis, not the reported durations after progress. In addition, once the final network diagram is approved, the contractor must recreate all manual progress payment updates on this approved network diagram and associated reruns for contract changes in each of these update periods as outlined above for regular update periods. This will require detailed record keeping for each of the manual progress payment updates.

- D. Following approval of the schedule, the VA, the General Contractor, its approved CPM Consultant, RE office representatives, and all subcontractors needed, as determined by the CO, shall meet to discuss the monthly updated schedule. The main emphasis shall be to address work activities to avoid slippage of project schedule and to identify any necessary actions required to maintain project schedule during the reporting period. The Government representatives and the Contractor should conclude the meeting with a clear understanding of those work and administrative actions necessary to maintain project schedule status during the reporting period. This schedule coordination meeting will occur after each monthly project schedule update meeting utilizing the resulting schedule reports from that schedule update. If the project is behind schedule, discussions should include ways to prevent further slippage as well as ways to improve the project schedule status, when appropriate.

1.12 RESPONSIBILITY FOR COMPLETION

- A. If it becomes apparent from the current revised monthly progress schedule that phasing or contract completion dates will not be met, the Contractor shall execute some or all of the following remedial actions:
1. Increase construction manpower in such quantities and crafts as necessary to eliminate the backlog of work at no additional cost to the Government.
 2. Increase the number of working hours per shift, shifts per working day, working days per week, the amount of construction equipment, or any combination of the foregoing to eliminate the backlog of work at no additional cost to the Government.

3. Reschedule the work in conformance with the specification requirements at no additional cost to the Government.
- B. Prior to proceeding with any of the above actions, the Contractor shall notify and obtain approval from the Contracting Officer for the proposed schedule changes. If such actions are approved, the representative schedule revisions shall be incorporated by the Contractor into the Project Schedule before the next update, at no additional cost to the Government.

1.13 ADJUSTMENT OF CONTRACT COMPLETION

- A. The contract completion time will be adjusted only for causes specified in this contract. For schedules complying with 1.1.A, request for an extension of the contract completion date by the Contractor shall be supported with a justification, CPM data and supporting evidence as the Contracting Officer may deem necessary for determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof based on revised activity/event logic, durations (in work days) and costs is obligatory to any approvals. The schedule must clearly display that the Contractor has used, in full, all the float time available for the work involved in this request. The Contracting Officer's determination as to the total number of days of contract extension will be based upon the current computer-produced calendar-dated schedule for the time period in question and all other relevant information.
- B. For schedules complying with 1.1.A , actual delays in activities/events which, according to the computer- produced calendar-dated schedule, do not affect the extended and predicted contract completion dates shown by the critical path in the network, will not be the basis for a change to the contract completion date. The Contracting Officer will, within a reasonable time after receipt of such justification and supporting evidence, review the facts and advise the Contractor in writing of the Contracting Officer's decision.
- C. The Contractor shall submit each request for a change in the contract completion date to the Contracting Officer in accordance with the provisions specified under FAR 52.243 - 4 (Changes) and VAAR 852.236 - 88 (Changes - Supplemental). For schedules complying with 1.1.A, the Contractor shall include, as a part of each change order proposal, a sketch showing all CPM logic revisions, duration (in work days) changes, and cost changes, for work in question and its relationship to other activities on the approved network diagram.

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AE Works Project No. 13045

Erie VA Medical Center
Expand Emergency Power Generation
Construction Documents
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D. All delays due to non-work activities/events such as RFI's, WEATHER, STRIKES, and similar non-work activities/events shall be analyzed on a month by month basis.

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